



# MAGAZINE

PRICE TWOPENCE

JUNE 1954





The *I.C.I. Magazine* is published for the interest of all who work in I.C.I., and its contents are contributed largely by people in I.C.I. It is edited by Richard Keane and printed at The Kynoch Press, Birmingham, and is published every month by Imperial Chemical Industries Limited, Imperial Chemical House, S.W.1. Telephone: VICTORIA 4486. The editor is glad to consider articles for publication, and payment will be made for those accepted.

## CONTENTS

Half a Million a Day, by J. H. Townsend . . . . .	162
Information Notes No. 98 . . . . .	165
One Man and his Job—Sheet Roller . . . . .	170
Gardening Notes, by Philip Harvey . . . . .	172
Training The Winner, by M. J. McLernon . . . . .	174
Power From Coal, by F. M. S. Harmar-Brown . . . . .	177
I.C.I. News . . . . .	181
This Happy Retirement by Anne Drinkwater . . . . .	189

FRONT COVER: Windsor Castle,  
seen from across the Thames

## OUR CONTRIBUTORS

ANNE DRINKWATER worked in Alkali Division for 27 years until she retired two years ago. Concerning her article, she writes: "The idea [of writing] occurred to me when I was in conversation with a number of people at the Alkali Division sports and was asked: 'How on earth do you pass your time now that you have no work to do?' True, these were men (perhaps not so adaptable or versatile as women), but I may possibly be able to give them an idea or two. . . ."

F. M. S. HARMAR-BROWN is a member of Central Publicity Department and a familiar contributor to the Magazine.

M. J. MCLERNON is a representative of the Irish Salt Co., our Dublin subsidiary. He worked for four years in a racing stable.

J. H. TOWNSEND is Deputy Sales Controller, a position to which he was appointed last September. Since the war he has had a variety of jobs, and has been successively Assistant Purchases Controller, a Deputy Regional Manager and Head of Office Administration Department. He joined the Company at Billingham in 1935.

# HALF A MILLION A DAY

## Some side-lights on I.C.I.'s Record Sales in 1953

By J. H. Townsend (Deputy Sales Controller)

Last year I.C.I.'s home sales hit a bigger figure than ever before. How is this huge turnover of the order of half a million pounds a day made up? Here is the story of where our products go and who our principal customers are.

IF you were to set out on a shopping expedition next week with the intention of spotting I.C.I. products in the various shops that you visited, ranging from the butcher's just round the corner to the large departmental store in the main shopping centre of your town, you would probably finish the day with only a few items recorded on your list, simply because I.C.I. sells very few products in the retail market for use by the general public. You would probably spot I.C.I. Packeted Salt and Packeted Soda Crystals, tins of I.C.I. decorative paints, including the 'Dulux,' 'Du-lite' and Brushing 'Belco' ranges, and 'Lightning' fasteners of all shapes, sizes and colours; you might notice 'Luron' fishing casts and Eley-Kynoch cartridges, and you might see clothes made of nylon and 'Terylene'; but, in the normal course of events, your list would probably stop somewhere round this point.

We know, however, that in this country I.C.I. has more than 50,000 customers to whom we sell several thousand different products, not mentioning various grades of the same product. Where, then, do these products go? What happens to them once they have left our factories?

The simple answer is, of course, that I.C.I. is essentially a seller to industry, and our products, in the main, are used within industry either as basic raw materials or for the treatment of raw materials, or to assist in some particular industrial process. One has only to look about in the home, on the roads and in the fields to appreciate these applications for our products.

Let us take a look at the home. First of all, the cement

and plasterboard used in the construction of your house may have been produced at Billingham; the new carpet which you may have just bought for your lounge may include 'Ardil' from Nobel Division; your glass may include Alkali Division's soda ash; the attractive plastic washing-up bowl which you may have been tempted to buy last week was probably made of our 'Alkathene.' If you have copper tubing for your plumbing it may have been made by Metals Division; the enamel finish on your washing machine or wringer may be one of Paints Division's stoving enamels; and the suit you are wearing—well, the dyes used for it may have been produced by Dyestuffs Division.

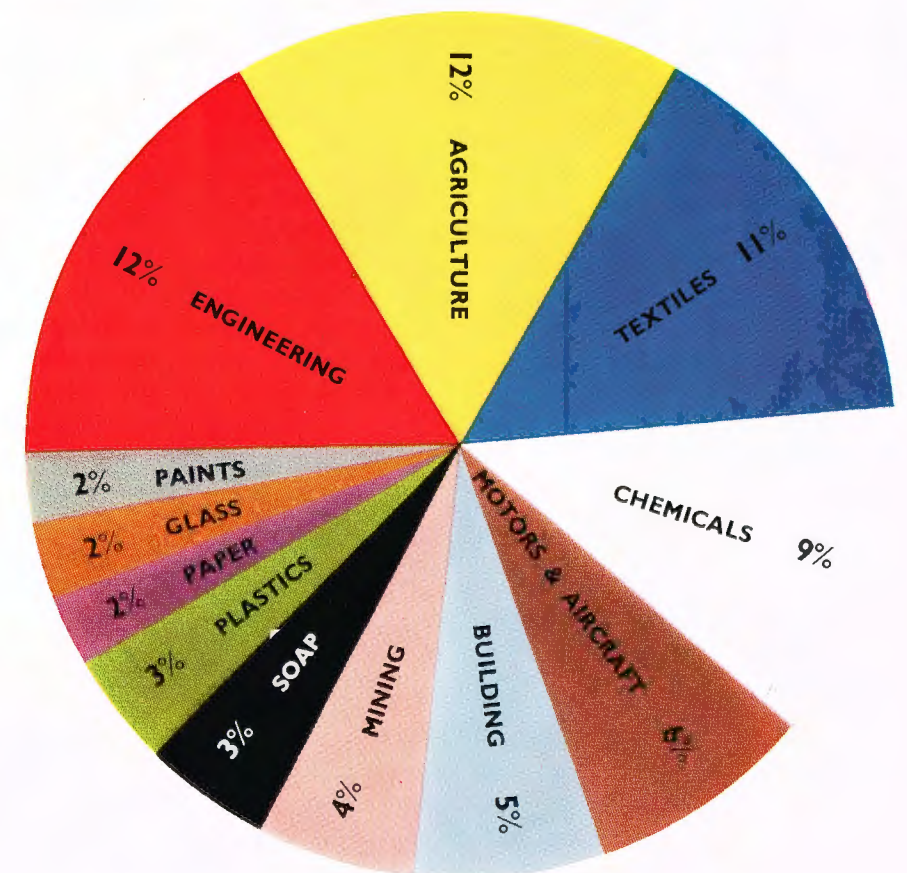
If you are the owner of a bicycle, motor car or tricycle it may be finished with I.C.I. paints and the upholstery may be in Leathercloth Division's 'Vynide,' and some of the parts may well have come from the Metals Division. The newspaper you read probably involved the use of I.C.I. chemicals by a paper manufacturer—chemicals such as caustic soda, liquid chlorine and 'Alfloc' water treatment products. The cartons which pack so many of your foodstuffs are probably gummed together with our silicate of

soda. Finally, Nobel Division may have manufactured the explosives which helped to win the coal you are now stocking up in your coalhouse for the winter months.

These are only a few examples of our products used in some way or other in the production of other articles which are in everyday use in the home but they serve to show how far-reaching is the influence of I.C.I. in our daily life.

### Our Numerous Customers

Walking along the road one can see many similar examples, such as the sheets of corrugated 'Perspex' on the roofs of garages and the ice-cream vendor passing by on his bicycle keeping his wares cool with 'Drikold,' a Billingham refrigerant. The engine passing through the local station probably incorporates some of I.C.I.'s non-ferrous metals; the lorry delivering beer to the local pub may be running on tyres which include some of our rubber chemicals. Then on the outskirts of the town the fields of wheat and other cereals, and the grassland for feeding the farmers' livestock, may have all derived benefit from I.C.I. fertilizers in the shape of C.C.F.s, 'Nitro-Chalk' or sulphate of ammonia. They may also have benefited from applications of our seed dressings and selective weedkillers.



Clock graph showing the proportions in which industry buys from us. Only a few products are sold retail direct to the public, and a list of these will be found on page 168.



It is, then, by looking at the finished products of other industries that one can appreciate how our products are used. There are, however, other manufacturers who make similar products, and it cannot by any means be automatically assumed that I.C.I.'s products are used on every occasion. In most cases our business has to be won in the face of keen competition.

Bearing in mind the wide field in which I.C.I. products are used, let us examine in more detail the various industries we serve. The table accompanying this article shows the percentage of our sales which go to various major industries in this country. The figures given are by no means static from one year to another; changes in our own production occur, and a boom or recession in one particular industry can make quite a considerable difference. The industries are listed under very general headings, each representing a collection of trades or industries. Textiles, for example, include the cotton, rayon, wool, synthetic fibre and clothing industries, plus many lesser sections of the textile industry.

Industry	% of I.C.I.'s Home Trade Sales		Industry	% of I.C.I.'s Home Trade Sales	
Engineering	..	12	Mining	..	4
Agriculture	..	12	Plastics	..	3
Textiles	..	11	Soap	..	3
Chemicals	..	9	Paints	..	2
Motor and Aircraft	6		Glass	..	2
Building	..	5	Paper	..	2
					71

It will be seen that the above industries take about 71% of I.C.I.'s sales. The remaining 29% is spread over many other industries too numerous to list—some large, some small, but many playing an important part in the industrial life of this country. Our customers in fact range from large shipbuilders to small bakers; from bookbinders to agricultural merchants; from textile printing firms to hospitals; and from producers of radio equipment to ice-cream manufacturers. And they all operate in widely differing ways, have different backgrounds, different outlooks and, furthermore, require our various products for different purposes.

Widespread Demand

Now let us take a few examples and see what types of products we sell to some of the industries who buy from us. It would be quite impossible in the space of this article to produce a detailed list covering all products and all industries. On the other hand, one can get an impression of the variety of products supplied to each industry from the following list representing our sales to the engineering, agricultural and paper industries:

Engineering Industry

Copper and copper alloys and aluminium alloys in various forms, heat exchangers, pipes, etc., ceramic insulators; 'Welvic' and polythene products, moulding powders, 'Perspex'; acids, ammonium chloride, degreasing plants and products, heat-treatment plant and products, plating chemicals, descaling products; industrial paints; water treatment products; potassium nitrate; propellant explosives; anhydrous ammonia, ammonia crackers and burners, 'Drikold'; rubber chemicals, pigments; 'Rexine' and 'Vynide'; quicklime, hydrated lime.

Agricultural Industry

Fertilizers, seed dressings, grass dryers, selective weedkillers, animal and crop protective products; 'Chloros,' dairy detergents, fumigants; lime and limestone; salt; aluminium and copper piping, sporting ammunition; 'Lustros'; corrugated 'Perspex,' 'Alkathene' tubing.

Paper Industry

Soda ash, caustic soda, sodium aluminate, water treatment products, sodium silicate; acids, liquid chlorine and chlorine products, sodium peroxide; dyes and pigments; lacquers and adhesives; 'Cellofas,' cellulose-base solution; 'Rexine'; 'Alkathene'; U.F. resins; copper anodes, copper, copper alloy and zinc engraving plates; lime.

Network of Sales Offices

The diversity of products supplied to these three industries is by no means unique, and similar lists can be drawn up for other sections. Nearly all these products are sold through the home trade selling organisation, which provides management and offices throughout the country in appropriate variety. Thus all customers have local I.C.I. offices to which they are important and to which they can turn for the solution of any of their problems which relate to the Company's products or potential products.

It is the job of these offices to assess the needs and the potentialities of the customers in their district, to help customers in every way, and to pass back to the Divisions the information that they may require. In doing this, of course, they work hand in glove with the Division sales control departments, receiving from the latter information and instructions about the Divisions' plans and policies. The information that is passed back to the Divisions about the industries we serve must particularly include information on developments of new products and new uses for established products, and in addition on new trends and developments in industry or even in one particular firm.

By studying this information—and more than one department has a hand in this—I.C.I. can be ready in good time to meet new demands as they come along.

Information Notes

I.C.I. ANNUAL REPORT FOR 1953

By the Editor

*The Company's Annual Report for 1953, with its announcement of the Board's decision in favour of the introduction of a profit-sharing scheme, attracted considerable comment in the press. Under this scheme, of which the details have still to be filled in, employees will by virtue of their service acquire a stake in the fortunes of the Company as ordinary stockholders.*

THE Annual Report of the Company for the year 1953 was circulated to stockholders towards the end of last month. It is a document of 48 pages, packed with interesting information. The outstanding feature of the Report is an outline of the profit-sharing scheme explained by the Chairman to Central Council on 21st May. Concerning this scheme, the words of the report are as follows:

"The Directors have for some time had under consideration the introduction of a form of profit-sharing for employees, as they are firmly convinced that the long-term interests of the Company would be furthered by identifying the interests of employees even more closely with those of the Company.

Profit-sharing Scheme Proposals

"The form of profit-sharing favoured by the Directors is a scheme in which substantially all male and female payroll workers and staff in the United Kingdom would, after a qualifying period of service, participate through the allotment for their benefit of fully paid Ordinary Shares in the capital of the Company; and the Directors intend to introduce such a scheme when the proposed capitalisation of reserves and scrip issues recently announced by the Board have been approved by the stockholders. The number of shares to be allotted in respect of each employee for each year would be arrived at by allocating 1% of his yearly remuneration for each 1% of total annual dividend for the Company's financial year in excess of 5% paid upon the Ordinary Stock of the Company (after effect is given to the proposed capitalisation of reserves and scrip issues) and by deducting tax at his appropriate personal rate.

"The sum thus calculated would be paid to trustees for investment in the Ordinary Stock of the Company, stock for this purpose being issued to the trustees at current market price. Stock so issued to the trustees would initially be re-

tained by them but would be transferred without restriction to employees when holdings of a suitable size (for example 25 £1 units of stock) had been built up. By this means the Directors believe that employees will feel that they have a stake of substance in the fortunes of the Company which they will wish to retain.

"The proposed scheme would not form part of the contract of employment between the Company and any of its employees, nor would the benefits under it form part of their contractual wages or remuneration. The Directors would retain complete discretionary control over the operation of the scheme in all its aspects, and they could accordingly amend or terminate the scheme if changed circumstances in the future should render such a course necessary.

Treasury Approval Sought

"In considering the introduction of the scheme, the Directors have assumed that the present proposals for the capitalisation of reserves and scrip issues will be approved; on that basis, the gross cost of the proposed scheme with a dividend rate of 7½% (taken at one-half of the proposed rate of 15% for the year 1953 before the proposed scrip issues) would be of the order of £1,000,000 for the year 1954. If the progress of the Company were such that higher dividends were paid in future years the cost of the scheme would naturally be higher, but it seems right to the Board that in that event employees should participate in such increase. The scheme is proposed on the basis that certain details for its operation will be settled with the Inland Revenue, and that the cost will be allowable as an operating expense for taxation purposes. The issue of shares may also require the consent of H.M. Treasury.

"The Directors believe that the interest of the stockholders would be well served by the introduction of the scheme as one which would contribute generally to the well-being of the



Company and thus enhance the future value of the stockholders' investment in the Company."

Under the heading of Finance the Report gives, in accordance with usual practice, a statistical summary of the consolidated activities of I.C.I. as follows:

	1952 £m.	1953 £m.
Gross trading proceeds and gross income from investments .. .. .	280.3	285.6
Raw materials, purchases for resale, and payments for external services .. ..	175.5	169.7
Wages and salaries .. .. .	61.2	62.8
Pensions and contributions to pension funds	3.9	4.5
Depreciation of plant .. .. .	10.1	11.6
United Kingdom and overseas taxation ..	13.8	17.2
Retained as reserves for employment in the business .. .. .	9.6	12.5
Distributed as net dividends to stockholders..	6.2	7.3
	280.3	285.6

### The Year's Trading

Commenting on the year's trading, the Report says:

"The improvement in industrial activity in the United Kingdom, which began towards the end of 1952, continued throughout 1953, and in the last quarter of the year industry was operating at a higher level. The Company's sales in the home market in 1953 followed this pattern, and their volume for the last three months of the year was a record.

"The Company found it necessary to increase some of its home trade prices early in the year because of increases in wages, fuel and carriage charges, but during the year certain prices were reduced. The following table shows that since 1938 the prices of I.C.I. products have risen appreciably less than the prices of the Company's raw materials and wholesale prices generally, which is largely a result of the Company's efforts to improve productivity by every available means:

	I.C.I. Purchasing Price Index	Board of Trade Wholesale Price Index	I.C.I. Home Sales Price Index
1938 .. ..	100	100	100
1948 .. ..	251	216	145
1953 .. ..	366	323	190

"During 1953 raw materials were easier to get, and although the Company's demands for certain materials during the latter part of the year were at record levels, it was generally able, with the co-operation of its suppliers, to satisfy its needs. Trading in a number of important raw materials, including non-ferrous metals, sulphur-bearing materials and certain oils, was returned in 1953 from government control to private enterprise, and most of the Company's purchases of raw materials are now made in the open market.

"The abolition of steel control, the increased production of steel and the improvement in delivery of engineering plant and equipment were a great help to the Company's construction programme."

In general the Report is most confident in tone. Only once does it strike a note of anxiety, when it comments upon the difficulty of recruiting enough scientists and engineers of the required quality in the following words:

"The Company, in common with the rest of industry, is finding it difficult to recruit enough scientists and engineers of the quality required to keep pace with the expansion of the Company's activities and to improve technical efficiency.

"The universities are not producing enough scientists and engineers to fill the nation's needs, and at the school stage too small a proportion of boys with ability and qualities of leadership elect to take science. This last point is due to a number of factors, among which may be included the lack of knowledge of the variety of careers which are available to those with scientific and engineering qualifications. Many of the young men who start as chemists or engineers find opportunities in the Company to fill important positions in most departments of the Company's activities, and an examination of the 275 most senior appointments in the Company at home shows that about 62% are held by qualified scientists and engineers."

Skipping at random through the Report one finds a number of interesting pieces of information. It is disclosed, for instance, that at the end of last year over 43% of the Company's operatives were on some form of payment by results. Another interesting figure is that of our expenditure on research, which is now running at £7½m. a year—rather more than 3% on turnover. Altogether about 6600 people, including some 1700 graduates, are engaged in research and development.

The number of the Company's employees at the end of last year is given as 107,650. Of these 30,250 were staff and 77,400 operatives.

### Huge Sums Ploughed Back

Finally, mention must be made of the illuminating appendix to the Report, setting out the cost of the I.C.I. capital programme during the period 1945-53 inclusive.

This discloses that during these nine years £213m. was spent on capital development, of which £163m. was on new plant and additions or alterations to existing plant; £25m. on additional stocks and other working capital requirements; and a further £25m. on new investment in subsidiary and associated companies.

This £213m. was raised in the following manner: £56m. from undistributed profits; £57m. from plant depreciation allowances and sums recovered on sale of physical assets; £22m. from temporary use of tax reserves; and £18m. from utilisation of the Company's cash resources and miscellaneous capital receipts. This left a balance of £60m. to be found, of which £40m. was raised by the issue of new ordinary shares and £20m. by the issue of unsecured loan stock.

These figures serve to illustrate the very large amount of capital which I.C.I. has managed to plough back in spite of heavy taxation.

## OUR EXPORTS ANALYSED

By W. G. Harrold (Export Executive Department)

*Last year our exports dropped by 7%, due chiefly to import restrictions; and at one time it looked as though the drop would be much more serious. In the end we lifted exports to the dollar area by £3m. and to the European Payments Union by £2m. In particular we increased our exports of plastics.*

THE total exports for last year amounted to £58.2 million, which, while it is a reduction of 7% on 1952, is a better result than appeared likely earlier in the year. The main reasons for this improvement were that over the year there was a substantial increase in dollar exports, particularly to the U.S.A. and Canada, and increased exports to the member countries of the European Payments Union. Since part of any surplus Britain earns with the European Payments Union has to be paid to us in gold, these latter exports are almost equally as valuable as the dollar exports. There was also a relaxation, in the second half of the year, of import restrictions in India, Australia, and to a lesser degree Argentina.

Exports to the United States of America were particularly good and were doubled. The chief products were metals, urea and 'Alkathene.' This increase, together with exports to the rest of the dollar area, gave us a total of £7.5 million, which was an overall improvement of £3 million on 1952. Our European Payments Union (E.P.U.) exports rose by £2 million to a little over £12½ million.

The increase in exports to Europe emphasises the remarkable development which has been taking place in recent years in the export of new post-war products such as the newer plastics. The exports of Plastics Division, including 'Alkathene' manufactured by Alkali Division, have expanded from £1 million in 1947 to over £6 million in 1953. In 1953 one-third of Plastics Division's exports were sold to Europe, whereas only one-quarter of other I.C.I. exports went to Europe.

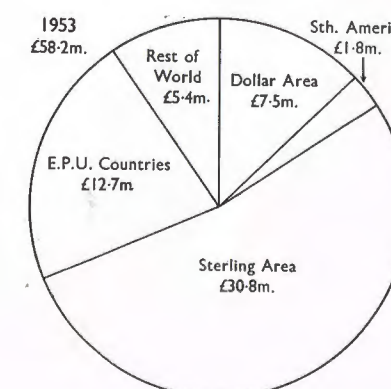
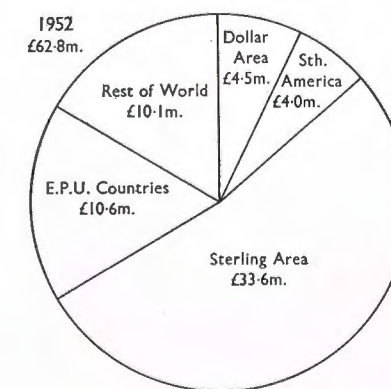
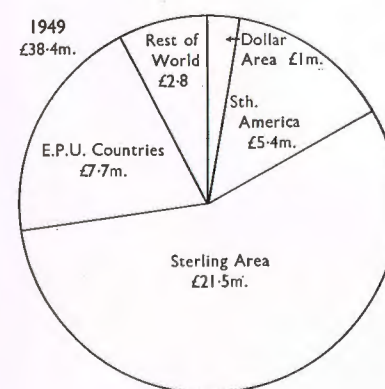
Other products which increased considerably in value in 1953 were the newer export products of Billingham Division. For example, since 1951 the tonnage of urea exported has trebled, and the exports of products such as 'Alphanol,' nonanol and phenol have increased from £13,000 to £316,000. The new pharmaceutical product 'Mysoline,' which was exported for the first time in 1953, also contributed £100,000.

These are some examples of the strength of our exports and of the very valuable additions to the range of products exported. The changes in market distribution since 1949, when the pound sterling was devalued, are illustrated in the diagrams below.

In 1953 the main hindrances to our exports continued to be import restrictions. Fortunately in the latter part of the year some of the more serious restrictions which were in force in 1952 for balance of payments reasons in Australia and India were relaxed and restrictions in Argentina were eased due to increased availability of sterling. Their place was, however, taken by balance of payments difficulties in Pakistan and shortage of sterling in Brazil and in a number of smaller markets such as Chile, Indonesia, Egypt and Turkey.

Competition increased from Germany; but in many cases, particularly in South America, our competitors were often successful through the growth of bilateralism, as a consequence of which purchases were made only where currency was available from commodity exports. As a result, markets for which we were traditional suppliers were buying elsewhere; for example, Brazil bought alkalis from France, which was not normally a large supplier.

This article deals briefly with the exports achieved in 1953. The results under the circumstances must be considered very satisfactory, particularly the manner in which the exports of new products have been developed. These results of course have been achieved through the sales made overseas by the I.C.I. overseas companies, branches of I.C.I. (Export) and selling agents which form a world-wide selling organisation. This overseas selling organisation of I.C.I. is fully equipped to develop the Company's export business in any part of the world where this is possible and it ensures that I.C.I. receives its full share of the expanding world trade in chemicals.



I.C.I. exports by currency grouping



## I.C.I.'s RETAIL PRODUCTS

*In relation to I.C.I.'s huge consolidated turnover—£281m. in 1953—the number of our retail products is small. Here is a list of them, compiled by the Divisions concerned.*

### Alkali Division

*Soda Crystals.* Sold in 2 lb. cartons.

### Billingham Division

*Fertilizers.* The I.C.I. fertilizers are sulphate of ammonia, 'Nitro-Chalk' and Concentrated Complete Fertilizer, commonly called C.C.F. Some retailing of the last two is done by Pan Britannica Industries Ltd., who repack our fertilizers into small packages for retail distribution. These small packages carry the I.C.I. name.

### Metals Division

*'Amal' Products.* These consist of accessories for motor-cycles such as carburetters, carburetter spares, control levers and control cable; carburetters for pedal-cycle motors; and bunsen burners.

*Shotgun Cartridges* bearing the Eley-Kynoch name. The five main brands are 'Alphamax,' 'Maximum,' 'Impax,' 'Grand Prix' and Special Trapshooting.

*'Lightning' Zip Fasteners.* There are three types of these: black pack, which contains coloured featherweight fasteners for dresses and knitwear; red pack, which contains nickel lightweight fasteners for skirts, housecoats and handicrafts; and green pack, which contains nickel lightweight fasteners for cardigans and jackets.

### Paints Division

*'Dulux' Paints.* There are two categories of these, 'Dulux' gloss finish and 'Dulux' undercoat. 'Dulux' gloss finish is an alkyd-based, high-gloss paint for use both inside and out of doors. It has a very long life and adheres well, and there are many attractive colours to choose from. It is easy to apply. 'Dulux' undercoat is a general-purpose undercoat formulated specially for use with 'Dulux' gloss finish.

*'Dulite' Emulsion Paint.* This paint is for use indoors on walls and ceilings. It dries rapidly, is washable, and can be applied by spray-gun, brush or roller. Emulsion paint, however, is unsuitable for steamy conditions, especially when applied to hard glossy surfaces.

*Cellulose Brushing 'Belco.'* This is a fast-drying paint for glossy and enduring finish on metal and woodwork. It is particularly suitable for cars, motor-cycles and bicycles and should always be used with its appropriate primer and undercoat. The supporting materials in the 'Belco' range are cellulose brushing 'Belco' primer, cellulose brushing 'Belco' undercoat, 'Belco' cellulose stripper, 'Belco' paint remover, 'Belco' rubbing compound, 'Belco' putty stopper and 'Belco' thinner.

*I.C.I. Car Polish 7 and I.C.I. Wax Polish.* I.C.I. Car Polish 7 removes traffic film and brings back depth of gloss and colour. I.C.I. Wax Polish is complementary to No. 7 polish in that it increases the gloss still further and gives a protective layer.

### Imperial Chemical (Pharmaceuticals) Ltd.

*Insect Powders based on BHC.* There are three of these: 'Gammexane' insect powder, a general insecticide for household use in 1 lb. sifter tins or 50-gramme sifter boxes; 'Lorexane' dusting powder, an insecticidal powder for use on pets, packed in 100-gramme squeeze containers; and 'Lorexane' aerosol insect spray, packed in 6 oz. and 12 oz. tins.

*Insecticide Soap and Lotion.* There is a 'Lorexane' head lotion for lice disinfestation in 50 c.c. dropper bottles; and 'Tetmosol' soap for use on dogs as an insecticide and for the prevention and treatment of mange, sold in 3 oz. tablets.

*'Cetavlex' Antiseptic Cream,* sold in 50-gramme tubes.

### Plant Protection

*For killing garden pests* Plant Protection markets a wide range of products. There are 'Abolene' tar oil winter wash and 'Abol' DNC winter wash, both for the control of fruit pests during the dormant season; 'Abol' gamma dust, a BHC dust marketed in sifter packs for control of flea beetle, wireworm, carrot fly, onion fly and cabbage fly; 'Abol' liquid derris insecticide for use against caterpillars and also against greenfly, blackfly and red spider; 'Abol' powder ant killer, based on BHC; 'Abol' slug and snail bait; 'Abol' smoke pellets for greenhouse fumigation and control of insects such as aphids and white fly; 'Drymac' derris dust for destroying raspberry beetle, caterpillars and gooseberry sawfly; 'Katakilla' derris spray for killing green- and blackfly, caterpillars and woolly aphid; 'Stictite' ready-prepared bands for trapping crawling insects attacking fruit trees; and 'Sybol,' an all-purpose insect spray based on BHC for use against pests attacking flowers, fruit and vegetables.

*For protection against plant diseases* there are two well-known Plant Protection sprays: 'Spersul' sulphur spray for control of scab; and 'Tulisan' for control of mildew, such as rust and black spot on roses and chrysanthemums and tomato leaf mould.

*For killing weeds* Plant Protection markets 'Atlacide' weed-killer dust, a form of chlorate weedkiller for paths and hard tennis courts; 'Abol' double strength weedkiller, a liquid non-arsenical weedkiller doing much the same job as 'Atlacide'; 'Weedicide' arsenical weedkiller; and 'Verdone,' the famous selective weedkiller for lawns.

### Salt Division

*Table and Household Salt.* There are three kinds of these: I.C.I. free-running table salt, sold in 1 lb. cartons and 1½ lb. drums; 'Salodine' iodised free-running table salt, sold in 1 lb. cartons and 1½ lb. drums; and I.C.I. household salt sold in 3½ lb. and 7 lb. cartons. These table and household salts are

made by the modern vacuum process, whereby purified brine is evaporated in closed steel vessels.

*Cooking and Cut Lump Salt.* The cooking salt is sold in 1½ lb. cartons and the cut lump salt in 2 lb. wrapped blocks. Both these salts are made by the old open-pan method of evaporating brine.

## RAILWAY ENGINES ABROAD

*Locomotives of Many Lands, by Peter Allen (I.C.I. Group Director), published by the Locomotive Publishing Co. Ltd. at 18s., is here reviewed by O. S. Nock, the well-known railway historian.*

HAPPY is the railway enthusiast whose business takes him into many lands! Happier still is he who can put his experiences into print for the enjoyment of others.

Such a one is Mr. Peter Allen, who has travelled far and wide on behalf of I.C.I., and who has produced, in *Locomotives of Many Lands*, a particularly charming and original record from his journeyings. It is primarily a picture book, with subjects ranging from fine camera studies to informal snaps, and while the purists among railway photographers might cavil at the jib of a crane pointing obliquely from the dome of a Swedish 2-6-2 tank engine and other occasional imperfections in composition, the author has succeeded in capturing atmosphere in most of his pictures where studio portraits of so many different locomotive types would have failed.

He sets the seal of personal experience from the very first page, where instead of a formal view of a Merchant Navy engine on the Golden Arrow there is the cheery face of Driver Jack Durrant leaning out of his cab. My heart warmed to the book before I had scarcely turned a page, for I know Jack Durrant well, and have ridden with him on the footplate on some of the fastest and heaviest of the boat trains.

But the book proper opens at Calais Maritime, with fine shots of De Glehn compound Pacifics on one page, and Mr. Allen's shrewdly interesting and witty comments opposite. He takes us through Belgium and Holland, through the Scandinavian countries, to Spain, Portugal and Italy; and then, as on a journey by the Orient Express, through Austria, Yugoslavia, Bulgaria, Greece and Turkey.

In June 1949 he travelled by through carriage from Paris to Istanbul, on a journey lasting 101½ hours and requiring the services of twenty different locomotives. "Merely to pass through the Iron Curtain," he writes, "and emerge on the other side seemed justification for making the journey, particularly as at several places there were long enough stops to visit the towns."

And the towns themselves: Verona, Venice, Trieste, Zagreb, Belgrade, Sofia, Adrianople, Chatalja, and finally Constantinople itself—all in the course of a single run!

There are striking pictures of Italian Pacifics, Austrian electrics, what Mr. Allen describes as "a hideous Hungarian 4-8-0," and Bulgarian giants, with memories of the engine-driver King Boris. He has caught, at an extraordinary angle, one of the grotesquely tall Greek 2-10-0's, and a happily familiar touch is brought by a shot of a post-war British-built 2-10-0 on the Turkish State Railways.

Still further afield Mr. Allen shows us the Stanier L.M.S. type 2-8-0's working in Iraq, and reveals his true love by including naught, or practically naught, but steam locomotives on the railways of Canada and the U.S.A. He has captured the local atmosphere brilliantly in his photographs taken in Brazil, Chile and Peru, where ancient American 4-4-0's, British-built 4-6-2 tanks and big 2-6-2's from Maffei of Munich share his pages with a remarkable French 2-8-4 design, inspired directly by the great André Chapelon himself. Mention of the firm of Maffei leads one to remark that Germany among European countries is prominent by its absence, and in his travels Mr. Allen has apparently not come across any of the famous Vulcan Liberation 2-8-0's built towards the end of the war for UNRRA. But the book is a series of cameos

rather than a comprehensive treatise, and in such informality lies its particular charm. He has the true enthusiast's love of the byways, and one can share his joy in the narrow-gauge railway treasures of Sweden, and the Göteborg-Sara standard-gauge line, fifteen miles long, with a 2-2-0 tank engine "about as substantial as a sewing machine."

Inevitably one reaches for the atlas to find the whereabouts of Mr. Allen's cameos, and I can well imagine that many of his readers will find themselves wondering if they themselves could not possibly visit at least some of the railways he illustrates.



*A huge, grotesquely tall 2-10-0 engine of the Hellenic State Railways*



# SHEET ROLLER

**D**ILYS Richards is one of the few people in I.C.I. who are paid for clock-watching. To be sure, it is a special kind of clock and she does more than just look at it, but its black and white dial certainly dominates every minute of her working life.

If you met this small softly spoken Welshwoman off duty, your chances of winning the "What's my line?" challenge would, I think, be very slim indeed. For Dilys's second home is a large rolling mill, the raw material she works with is sheet metal, and the machine she controls so calmly towers 9 ft. 6 in. above her and weighs 15 tons.

Metal rolling—reducing the thickness of metal by passing it through steel rolls—is a basic process in several Metals Division factories, and everywhere but at Waunarlwydd Works it is a man's job—and needs to be. But the sheets Dilys works with are made of aluminium and are very much lighter than the copper or brass sheets demanding masculine brawn.

Dilys showed me just how light and easy to handle they are. Drawn up in front of the rolling unit was a truck piled with aluminium sheets, eight feet long, four feet wide, and almost one-tenth of an inch thick. "Of course, sometimes they're bigger than this, but they're very light," said Dilys, negligently raising the end of a sheet several feet into the air, "and quite soft." She applied a thumb to one corner and the thick metal curled as obediently as a cabbage leaf. Having failed abysmally in my attempts to follow suit, I decided that, like nurses, women sheet rollers must develop a knack in handling ungainly victims!

She turned to introduce me to the rolling unit. Facing us on eye level, poised between massive stands of painted iron, were the rolls themselves—huge smooth cylinders of polished steel. The stand on the left carried two push-buttons and that on the right a white-faced, black-figured dial numbered at five-minute intervals and fitted with large and small hands—exactly like a clock. In front of the rolls was a simple wooden runway, clearly designed to guide the metal sheet into the space between the rolls.

That space, I knew, was a vital factor in rolling, for as the softened metal was grasped by the rolls it would be pressed out—as effortlessly as a child flattens plasticine between finger and thumb—until it was thin enough to pass through the gap. It was obvious even to my non-technical brain that the gap would have to be made narrower if the metal needed reducing still further.

This was where push-buttons and the clock-watching came

in. Dilys demonstrated how, when she pressed one of the buttons, either the large or the small hand on the dial moved. "When I press this, the gap between the rolls is automatically adjusted. The figures on the dial show the position at a glance, so that I know exactly how thick the metal will be when it comes through. We reduce by very small amounts at each pass because metal gets brittle if it is treated too roughly—the sheets we are rolling now, for instance, will probably need eight or nine passes."

Dilys was ready for work. She and the assistant roller—the first of her team of four assistants—lifted a sheet from the truck and transferred it to the runway. Dilys pressed a button, the magic clock-hands jerked obediently into position, and the assistant roller slid the sheet between the rolls. As it passed through, the sheet dropped on to a second runway on the other side, where two more assistants picked it up and posted it back over the rolls to Dilys and her "mate," who promptly set the cycle of operations moving again. After each pass the metal smiled more brightly and held itself more crisply.

When Dilys handled it for the seventh and eighth time she paused to check the thickness with a hand gauge; a lifted hand signalled "Take it away," after the final pass, and the inelegantly named "behinders" laid the smooth, gleaming sheet gently on the truck of finished work.

Dilys and her team keep this up with a steady and unstrained rhythm for eight hours, each girl resting for part of every hour. The three-shift cycle covers the whole twenty-four hours, but after more than ten years on the job Dilys is quite resigned to changing timetables. "After all," she says, "when you're working it makes no difference whether it's light or dark outside."

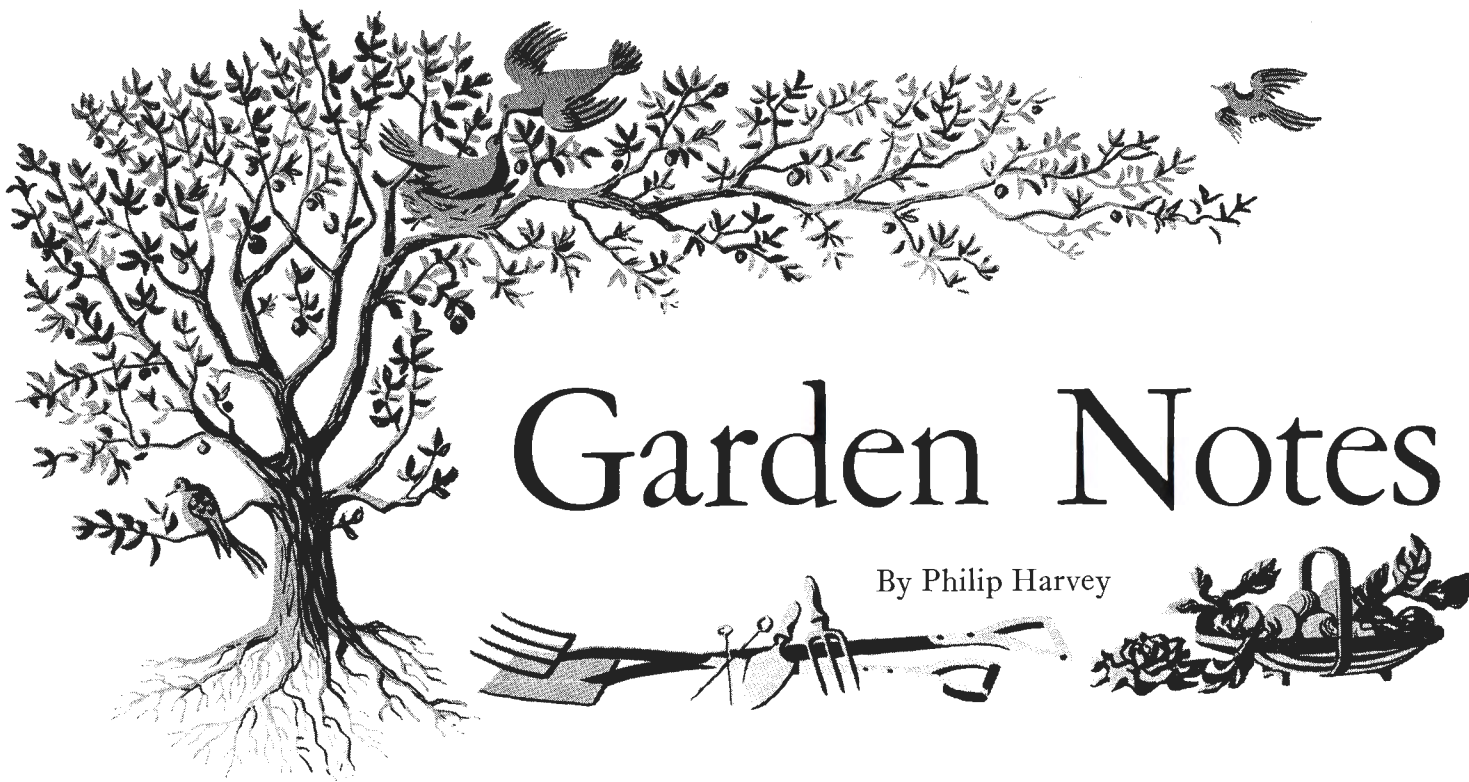
She likes the work because it is never monotonous—variations in thickness, size and type of metal see to that—and because it involves plenty of responsibility. For of course the control Dilys exercises is very important indeed: if the sheets are insufficiently rolled they will be outside the tolerance allowed by the customer; if they are over-rolled they may be too hard for further work. She and her team aim at keeping their unit clean and smooth-running all the time and take a natural pride in avoiding as far as possible the need for male assistance with repairs.

Dilys, who spends her time watching hands move round a dial, had a final characteristic word for me: "No, I never get bored. When you're busy you don't have time to keep looking at the clock."

D.B.T.







# Garden Notes

By Philip Harvey



**T**HOUGH June brings some very choice vegetables like early peas and early potatoes, there is no denying that it can be one of the worst months for insect pests. There are, of course, various ways by which crop losses can be reduced to a minimum, some cultural, others chemical. For example, vegetables grown in unsuitable positions or starved of plant foods are often more susceptible to pest and disease attacks. An open, sunny position is best, though salad crops like lettuce will tolerate shade. Root crops like carrots and onions are almost certain to fail unless they receive plenty of sunlight.

I suppose the easiest vegetables to grow are broad beans. Unfortunately they succumb very easily to black fly. As far as I know, there is no variety that can really be termed resistant, and this pest is found on all types of soil, whether in town, suburb or country. (Other names are collier, dolphin or the correct name, bean aphid.) Black fly is also found on rhubarb, spinach, dahlias, marigolds and nasturtiums, as well as weeds like docks, shepherd's purse and thistles.

Every vegetable grower can identify the culprits. They smother the tips of the bean shoots in a black mass, increasing at a prodigious rate and spreading from one plant to another. Like other types of aphids, they suck the sap from stems, foliage and flowers. On broad beans the pods are, of

course, stunted and growth is checked. Autumn-sown broad beans often escape, as the majority of their flowers are usually set before an attack begins. At the same time, autumn sowing, save on light, warm soils—and even then in a slightly sheltered spot—does not give the best results. An early February sowing in boxes or pots in a cold frame is decidedly better.

**N**icotine, derris or, best of all, BHC will tackle black fly, provided you spray or dust directly the damage is noticed, and by directly I mean within a matter of hours. Pinching out the tops also helps. I have always found black fly easy to kill except on nasturtiums. In this case the smooth leaves make it very difficult to secure a proper coverage with an insecticide spray or dust. If, however, you are more successful than I have been in destroying this pest on dwarf nasturtiums like Golden Gleam, I suggest adding the leaves to a salad. They will always tone down an excess of lettuce!

Another widespread pest is the cabbage white butterfly. The caterpillars of the various cabbage butterflies and cabbage moth do considerable damage to brassicas. Hand picking the dull yellow eggs which are often found underneath the leaves is a sound



Illustrated by Marjorie Saynor

preventive measure, also trapping the butterflies with a net. If you have a buddleia anywhere near your vegetable plot you must expect an infestation of butterflies on any brassica, as the shrub attracts these insects. The remedy for cabbage caterpillars is a DDT or BHC dust.

Whenever there is a spell of showery weather, plant out all types of winter greens. If you are forced to plant out during a dry period, puddle the roots. Puddling consists of making a mixture of clay and water and working a small quantity round the roots of each plant. Puddling is also useful when transplanting shrubs and small trees. Remember always to make the soil very firm round the roots, as brassicas dislike loose ground.

**A**utumn-sown onions often run to seed. Immediately you see a flower head, snap it off. Though the majority may not be ready until late July, any that are obviously fit to use may be dug up. Yellowing of the foliage is a sign that onions are ready for lifting. If ripening has been delayed by bad weather, bend over the tops at the neck of the bulb.

Planting outdoor tomatoes towards the end of May is always risky, except in very sheltered districts. Early June is un-

doubtedly much safer, provided you obtain plants that have been properly hardened off. A tall, lanky plant is most unlikely to produce a good crop. Pot-grown specimens are more expensive than those raised in boxes, but will fruit earlier.

**O**utdoor tomatoes are a gamble in the north, mainly owing to insufficient sunlight and lower temperatures during the summer months. In the south, given a sunny position, especially against a wall or fence, three trusses can be expected to ripen satisfactorily in a warm summer. The soil should be thoroughly watered before any planting is attempted and at least eighteen inches allowed between individual plants. Feeding is best deferred until the first truss has set.

June is pre-eminently the month for roses. If you have pruned carefully and kept the roots cool by mulching with peat, lawn-mowings or similar material in dry weather, you can sit back and enjoy the first crop of bloom.

When cutting blooms for the house, do not cut with very long stems on newly planted rose trees. They will lose foliage needed for manufacturing plant food. Established trees usually have plenty of foliage to spare, and you can safely cut with long stems.





# Training The Winner

By M. J. McLernon (Irish Salt Co.)

Amid all the excitement of the racecourse with its glittering prizes, how few pause to consider the actual stable routine to which race day is but the climax. Here is the inside story of work in a racing stable, written by one who spent four years with a Newmarket trainer.

THE first public appearance for the thoroughbred is usually when he is sixteen to twenty months old. He then goes to one or other of the yearling sales, of which the most famous are the July Sales at Newmarket and the September Sales at Doncaster. Here colts and fillies change hands for anything from £50 to £5000. Some are bought to train on as steeplechasers. These will return to the land. But the best of the bloodstock goes from the sales to the trainer's yard.

Up to now yearlings have usually had only head-collars on them and have been handled but not ridden. Now comes the time when they have to be broken, that is have a saddle on their backs, a bit in their mouths and a man on their backs. Breaking a yearling is hard work, as most of them resent the treatment intensely. At first they are just driven from behind in long reins to learn to take hold of the bit, otherwise riding a yearling would be like driving a car with faulty steering, likely to go any way.

About the end of December the trainer sees that the yearling is beginning to take shape. The animal is taught how to walk correctly, how to trot, and how to canter gently. He gradually gets used to company and is made to canter alongside other horses. About this time also he gets his first haircut. With all their baby flesh on them yearlings sweat very easily, so it is most important to clip the hair so that they will not catch cold. With this done they do not sweat so freely. Coughs and colds among his horses are the trainer's nightmare.

About January, the two-year-old as he is now (the official birthday for all horses is January 1) begins more strenuous work. He does what is called half-speed gallops and is also introduced to the nightmare of the starting gate, where incidentally so many races are won or lost. Most young horses are very nervous of the gate, and a trainer has to use extreme caution to break the intricacies of it to them gradually.

When the first few half-speed gallops are over, a trainer

is usually in a position to tell the owner whether his horse is backward or whether he will be an early runner. This depends mostly on the animal's physique. Big horses are usually what is called "late coming to hand" and will probably not see a racecourse until toward the end of the season or possibly not until the following year as three-year-olds.

While all this has been happening, the young horse has been gradually broken to a rigid stable routine.

He has his breakfast at about 6 a.m., after which he is tied up while his stable is cleaned, brushed out and disinfected and sand is put down to avoid slipping on the floor. Then he is brushed or groomed and has his tack put on. This consists of saddle, bridle, and sheet to keep him warm. He is then taken out for exercise, walks, trots and canters, and about an hour and a half later is brought back to stable, where he is fed again and bedded down for the day. Another feed at about 1 o'clock and he rests in his stall until about 4.30, when he is again tied up and gets a grooming.

The routine ends about 6.30 p.m., when the trainer inspects his horses. This is one of the most important parts of the trainer's work, as he must make sure that the horse is sound and that there is nothing wrong with his tendons. A horse with bad tendons is just one long worry, as he is always liable to break down.

A good trainer takes notice of a lot of points during the few minutes he looks at his charge. Usually he is told if the animal is feeding well. If there is any doubt he has a look at the horse's eyes, because these are the two places where sickness is most likely to be detected. The horse's coat is also looked at. If glossy and healthy-looking it usually means that the horse is forward in condition and should soon be ready for the racecourse. If backward, the coat may be expected to improve when summer comes and the horse, as they say, gets the sun on his back. Usually if a horse shows any sign of sickness his temperature is taken,



PINZA WINNING THE 1953 DERBY, ridden by Sir Gordon Richards. An outstanding horse, Pinza was bought by Sir Victor Sassoon at the Newmarket yearling sales for £1500. He won over £47,000 in stakes and was syndicated at stud for £80,000.

the normal for a horse being 100·1°. If it is much above normal, a fever drink is administered. The horses are then fed and locked up for the night.

But for the trainer the day is by no means over. He gets a weekly copy of the Racing Calendar, in which all the next season's races are listed, and picks the most suitable contests for his charges, posting the entries to Wetherbys, who are the official receivers of the Jockey Club. He also examines the entries in the other races in which he has horses entered, and has to make up his mind whether his entry will be fit enough to run and whether, if the race is a handicap, the chances are good enough.

If he decides that his horse will not be fit in time he pays forfeit, which means that he cuts his losses. He generally loses the amount it cost to enter the race—usually £1 for every £100 stake. If the horse is left in after the forfeit stage, then the trainer has to pay up considerably more.

In the Derby, for instance, it costs about £10 to enter, £40 after the first forfeit stage and £50 after the last stage, which means that it costs £100 to run a horse in the Derby.

Next the trainer gets busy engaging jockeys. He always

tries to obtain the best jockey at the weight or else some jockey whom he thinks will suit his horse. A lazy horse will need a strong jockey who will get the utmost out of him without punishing him too hard. A horse of doubtful stamina will need a jockey who is a good judge of pace and will be able to try to win his race at the precise moment.

In point of fact that is why Australian jockeys are very much in demand in England at present. It is a well-known fact that they are supreme judges of pace, mainly because from their apprentice days they begin to learn what pace they are going. A jockey gets £5 a ride and £7 for a winning ride, plus a present which usually amounts to 10% of the stake money won. Needless to say, most of them prefer it in cash.

When a trainer has settled the problem of his jockey his next job is to arrange the transport of his horse to the race meeting. Since most trainers find it too costly to run a motor horsebox of their own they usually rely on British Railways or some local company specialising in horse transport. Needless to say, some of the boxes are very luxuriously finished. Then the trainer usually writes or telephones his owners telling them how their horses are getting along, always being on the cautious side and never



giving them false hopes; because every owner thinks he has a world-beater until proved otherwise. And so the day ends.

Next morning it is the same all over again. The horses go out in the morning, and there is no finer sight than to see a string of racehorses at exercise on Newmarket Heath or Epsom Downs on a summer morning.

Usually in one corner of the heath are to be found the touts—the men whose job it is to report the work done by horses to their various papers so that the public will get to know what is going on behind the scenes. They also report the gallops that particular horses do and the progress they are making. In the old days touts were the bugbear of trainers, as the latter considered them to be snoopers; but now they are held in high esteem. They go out in all weathers, and it is a well-known fact that they know every horse in their particular area, which can mean between 2000 and 3000 horses.

But to return to our two-year-old. When the trainer decides it is nearly time for him to have his first race he is given some sharp gallops to wake him up and also is introduced to racing silk to get him used to the colours the other jockeys will be wearing.

### *Eve of the Big Day*

Then comes the eve of the big day. First of all he has his racing plates put on—very light aluminium shoes which weigh only a few ounces. There is an old saying that an ounce off the feet means a pound off the back. His mane is trimmed, and he gets an extra-special grooming. Next morning at about 6 a.m. he is fed and has all his legs bandaged so that he will not hurt himself in the horse-box. About 7 a.m. he leaves for the racecourse, where he arrives about 10. Then he has his mane plaited and a muzzle put on so that he will not eat anything. Finally he is left to himself until about an hour and a half before the time of his race, when he is tied up and groomed and his plates are examined to make sure he has not damaged them.

While all this is going on the trainer also is fairly busy. He usually leaves for the races at about 10 a.m., and when he gets to the racecourse he sees that the horse is all right. Then he fills in the declaration form, which in effect is saying that the horse will run. All horses for any one race must be declared forty-five minutes before the off. The name of the jockey must also be inserted; also it must be stated whether the horse is wearing blinkers or not, so that the public may be informed. Most of the professional backers pay great importance as to whether a horse is wearing blinkers or not.

Then the trainer gives the owner's racing colours to the jockey's valet, who takes care of everything the jockey needs—boots, breeches, saddles, backcloths, whips, etc.

About half an hour before the race the trainer goes to the weighing room and passes the jockey at the scales: that is, he sees that the total weight of the jockey, saddle and backcloth is correct. He then takes the saddle and bridle to his horse's box and puts them on together with a number cloth which corresponds with the horse's number on the racecard. He also takes note of what number his horse has been drawn at the starting gate, the low numbers being usually on the left and the high numbers on the right as they face the starting gate.

### *Importance of the Draw*

The draw is of great importance on some courses. In the Derby, for instance, the low numbers are considered badly drawn because there is an elbow soon after the start, and when the high and middle numbers race for it the low numbers are inclined to be shut out.

When the horse has been saddled he is taken into the parade ring to come under the gaze of the public. Owner, trainer and jockey stand in the ring and the trainer tells the jockey what kind of race he wants him to ride, whether to give the horse an easy race or whether he is forward enough to win. The bell rings and the jockey mounts, and out the horse goes on to the racetrack. The trainer has done his job; now it is up to the horse and jockey—it is they that the people have put their money on. If they win they are the best in the world, but if they lose they have done nothing right.

And so it goes on day after day, the only difference being that the horse is improving all the time. If the horse wins the Derby it is a dream come true. But of course there is only one Derby winner every year; yet every horse foaled is a potential one until he proves otherwise. A trainer treats each horse as an individual, and it is most important that he should do so, because a selling plater is just as important as a Derby winner from a gambling point of view.

The one remaining point to be discussed is what it costs to train a horse. Usually a trainer charges £7 7s. per week for each horse, and on top of that an owner has to pay heath tax, the charge for using gallops, shoeing and veterinary charges, entries, and transport expenses. The whole lot works out not far short of £500 per annum, which in itself signifies why racing is called the sport of kings.

When the trainer receives his £7 7s. he does not have much left out of it when you realise that he has to pay for labour and feeding stuffs. This may explain why occasionally he has to try to bring off a gamble. So the next time you pick up a paper and see that so and so has won, and you had nothing on it after backing it several times and it being nowhere, you may perhaps realise that that was one for the trainer himself, as most of them like to have a winner for themselves periodically just to help the expenses.

# POWER FROM COAL

By F. M. S. Harmar-Brown

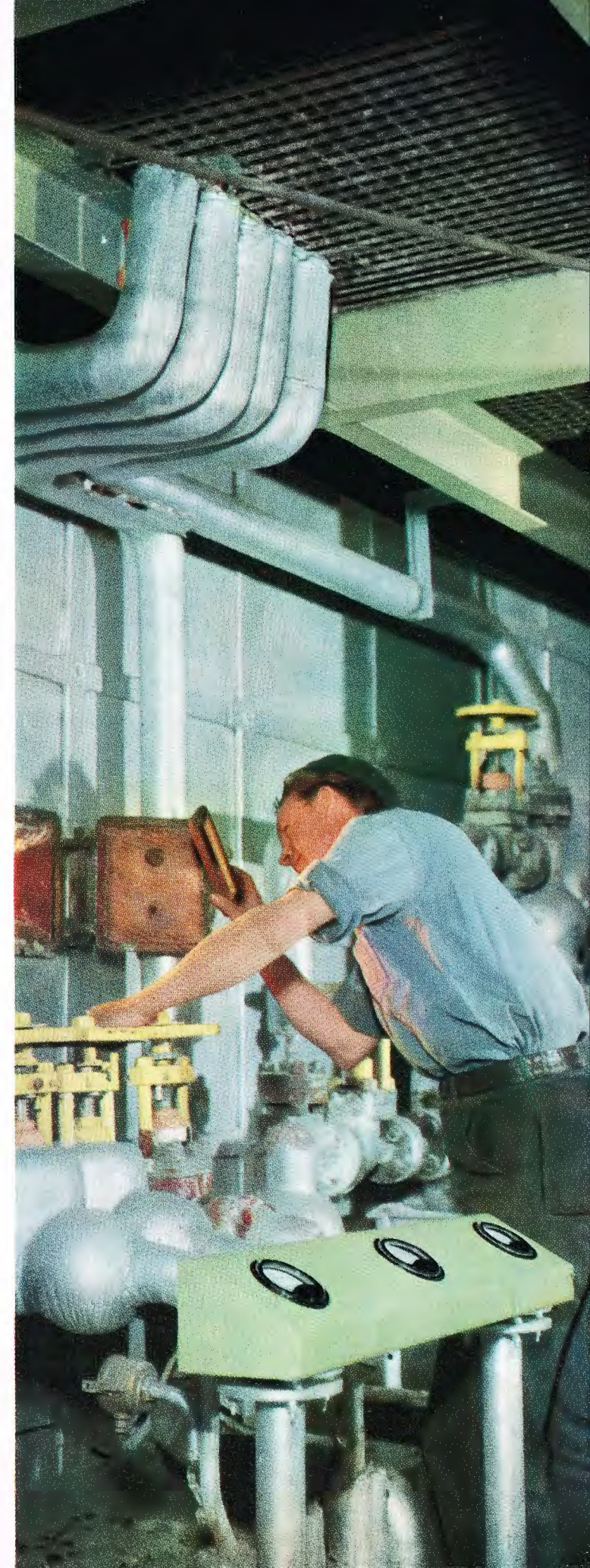
**Here is an account of a visit to Wilton's magnificent power house, where the steam does two jobs, both driving the electricity turbines and providing heat for process work.**

*Colour photographs by Billingham Division*

As the visitor approaches the Wilton power station he probably notices first the 300 ft. reinforced concrete chimney—a landmark all over the huge Wilton site—and in front of it the austere glass-and-brick mass of the power station building itself. One might almost imagine that the architect had in mind a new memorial theatre for Stratford-on-Avon were it not for the chimney and the huge and rather ungainly square duct that rises in stages, carrying the coal to the roof from a point on the railway sidings well behind the main building.

When the present installation is in full commission, coal will be burned at the rate of two tons every five minutes. The coal is tipped out of rail wagons and is led by a system of seven 3 ft. wide conveyors to the very top of the power station building, where it is discharged into huge

*A GLIMPSE OF THE FURNACE inside the automatic boilers. Each of these boilers is capable of producing enough steam to satisfy the electricity needs of a town of 25,000 inhabitants.*







THE POWER HOUSE CONTROL ROOM, where a balance is kept between the two uses for which steam is made—driving the turbines to make electricity and supplying heat for chemical processes

hoppers, each holding 660 tons (enough to keep a small house warm for 260 years).

From these hoppers the coal is fed by gravity to pulverising mills—three of them to each boiler. In these mills the coal is crushed by large steel balls into a very fine powder which is blown into the boilers, where it burns almost like a gas. There was a spare steel ball lying by one of the mills when I went round the plant. It was a little larger than a football and weighed about  $1\frac{1}{2}$  cwt.

Now to the boilers themselves. The modern high-pressure boiler is quite different from the old idea of a sort of pot half full of water with a safety valve at the top. These new boilers are virtually huge furnaces, each as big as the inside of a house, the walls of which are lined from top to bottom with, literally, miles of steel tubing. The incoming water is circulated through this tubing, and as it is evaporated by the furnace heat the steam is collected

in a steel drum at the top. The working pressure is about a thousand pounds per square inch, and the drum,  $4\frac{1}{2}$  ft. in diameter, is made of steel over 3 in. thick.

If we reckon the firing level of the boilers as the ground floor, we can travel in the boiler house lift up past six more floors before we reach the steam drum level on the seventh floor, while the ash-collecting arrangements are at the basement and sub-basement levels.

The firing floor of the boiler house is certainly the point at which the coal is fed in, but it is very different from the general idea of a stokehold. Pleasantly cool, remarkably clean, and attractively done out in silver, cream, blue and green, the firing aisle is luxurious by pre-war standards. In front are the furnaces; behind, the elaborate control gear for the automatic firing arrangements.

These boilers—there are two installed at present, and more are being added as the factory grows—can run on



The steam-driven turbines finished in blue steel



plant gas and fuel oil as well as pulverised coal with automatic control of firing. The only human touch is the small plastic tiddleywinks which are hung—yes, by hand!—on indicator boards to show what fuel a particular burner is using at the moment.

A formidable battery of fans keeps the air supply on the move through the furnaces. Air is blown into the boilers by two fans which draw in warm air from the top of the building; another set of fans draws the spent air out of the boilers and pushes it up the chimney, and a further set supplies the air for blowing the pulverised fuel into the furnaces. Elaborate dust-extraction plant ensures that the final flue gases are as free as possible from solid particles, and indeed the "smoke" from the chimney is hardly visible.

The ash from pulverised fuel is quite unlike any ordinary ash. It looks more like grey face powder than anything else, and a special plant pumps it away in a water-mixed slurry to waste land some two miles off, where it settles in what the engineers have rather wistfully termed "lagoons."

The steam supplied by the boilers is much more exciting stuff than the misty vapour that came out of James Watt's kettle. It is at a pressure of nearly half a ton per square inch and superheated so that it becomes an invisible gas passing through almost red hot tubes. In this state it is quite unsuitable for use on the various plants at Wilton but is just ideal for a high-pressure steam turbine.

### Magnificent Turbine Room

If the boiler house at the Wilton power station is surprising, the turbine room is magnificent. It is high, spacious, airy, well lit and scrupulously clean. Yet, as the engineers will tell you, not a penny has been spent for mere showmanship. The four great turbo-alternators are ranged down the length of the floor, and only a sound like the muffled rushing of a fierce wind from the turbines and a powerful hum from the alternators reveals that these apparently sleeping monsters are surging with inner life.

In principle the steam turbine is exactly the same as a series of those whizzing sirens found in crackers. The steam is blown in at high pressure at one end and expands through alternate rings of fixed and moving vanes, driving round the wheels to which the moving vanes are attached and emerging, cooled and at a lower pressure, at the other end. The energy that it has lost has gone into rotating the turbine shaft, and this in turn drives the electrical alternator which produces a corresponding amount of electrical energy.

Now, there is one very important difference between the Wilton power station and an ordinary power station working to the Grid. The latter has as its sole object the

generation of electricity. At Wilton the main object is to produce lower pressure steam for heating up various chemical processes: the electricity produced is, so to speak, a by-product, and the heat in the exhaust steam, far from being wasted, is the main object of the exercise.

This means that the overall efficiency of Wilton's power station—that is, the proportion of heat in the fuel that is ultimately put to good use—is far higher than anything that can ever be achieved by an ordinary electricity generating station—unless, of course, it is tied up in some way with a heating scheme, as at Battersea, where waste heat from the power station is used to heat a block of flats in Pimlico.

### Extreme Flexibility

It would obviously be a good thing if matters could be arranged so that when just the right amount of steam was being passed out by the turbines, just the right amount of electricity was also being generated by the alternator. An elaborate and very interesting set-up has been arranged to achieve this, and the whole plant is extremely flexible.

Steam is wanted on the plant mainly at two pressures—250 lb./sq. in. and 20 lb./sq. in. Accordingly the first two turbines, working in parallel, take in boiler steam and pass it out at 250 lb./sq. in. Some of this pass-out steam is sent out to meet the needs of the process plants. The rest goes on to the second two turbines, also working in parallel. These let it down to 20 lb./sq. in., at which pressure again steam is drawn off to be fed to the works, while any remaining steam goes through further stages in the same turbines to be finally condensed to water and pumped back into the boilers.

So that the demand for steam and electricity can be matched, arrangements are made for steam to be "let down" direct from the boilers to the 250 lb. and 20 lb. steam mains *if required*, using reducing valves and de-superheaters (which spray water into the steam). To provide a further adjustment, the alternators are linked with the Grid so that electrical power can be exported or imported as operating circumstances demand.

You will see that to get the best operating conditions under any particular pattern of demand means adjusting the steam supply to the turbines, which in turn affects the quantity and quality of the steam passed out, so that corresponding adjustments have to be made to the de-superheaters and reducing valves, while both these sets of adjustments again affect the rate of working of the boilers.

To keep this complex network of interconnected apparatus working efficiently, control is centralised in the control room, in which the touch of a handle sets a whole train of adjustments in motion throughout the power station.

# I.C.I. NEWS

## HEAD OFFICE

### Shipping Man shines in Soccer International

The critics found the England v. Wales amateur soccer international at Newport on 24th April an undistinguished game; but they all praised the sound defensive work of Mr. Laurie Hunt at left full back.



Mr. Laurie Hunt

Mr. Hunt is a member of Liverpool Shipping Department, and this was the second time he had been chosen to play for England. The first was on 26th March against Scotland at Wembley.

Normally Mr. Hunt plays for Liverpool Marine, the only amateur club in the Lancashire Combination. He has always been the mainstay of the "Singles" XI in the Liverpool Shipping Office annual Married v. Singles match, but they will soon lose him to their opponents. Next September he is to marry Miss Ruth Wilson, a clerk in the same office.

## ALKALI DIVISION

### County Football Champions

The Alkali Division's soccer team has won the Cheshire Football Association's Amateur Cup for the fourth successive season by defeating Hoyle Athletic by 6 goals to 1 in the final of the cup competition on 9th April. The cup was presented to Alkali captain Ralph Hewitt by Mr. J. Parker, the



The Alkali Football Club captain, Ralph Hewitt, receives the amateur cup from Mr. J. Parker

president of the Cheshire F.A. As a member of Winnington Distribution Department Mr. Parker must have found this a pleasant ceremony.

The club has chalked up four successive wins before—in the seasons 1935–8, the war years putting a stop to their run of victories. In the last thirteen cup competitions the Alkali Club has played in the final nine times, finishing as winners eight times and runners-up once. Supporters of the club are beginning to look upon the cup as the exclusive property of the Alkali Division!

The football club has finished the season in fine style by winning the championship of the Mid-Cheshire League—the first time since joining this league that they have pulled off the double by winning both league and cup. It is also believed that this is the first time that an amateur team has achieved this.

### 'Luron' Held It!

An angling enthusiast for many years, Mr. L. Thornley of the Technical Directors' Department at Winnington hooked and held his biggest-ever catch while out fishing in early April. His bag was a 7 lb. 5 oz. trout measuring 27 in. in length and 15 in. in girth, and the photographs that he was prudent enough to have taken prove beyond any doubt that this one certainly did *not* get away!

The trout is a near-record for the Walton Reservoir near Warrington where it was caught, the heaviest being one of 7 lb. 11 oz. that was landed 34 years ago; it is now in the Warrington museum. As any good I.C.I. angler should, Mr. Thornley swears by his 'Luron' line and has for long been a faithful advocate of 'Luron.' Landing this prize trout took ten minutes with the assistance of the reservoir keeper, who netted the fish. Upon capture the trout disgorged about seven small fish, and five more were found in the stomach.



Biggest for 34 years: Mr. Thornley with a trout from Walton reservoir

## I.C.I. RIFLE LEAGUE

The 1953–4 I.C.I. Rifle League matches have now been completed. The final results show Kynoch A at the head of Division I, with an aggregate of 2977.



In the individual aggregate of Division I there was a tie between Mr. Hartley of Billingham A and Mr. Skinner of Kynoch A, both of whom managed to complete the league without dropping a single point. A tie shoot is being arranged, and the silver medal will go to the winner.

Mr. J. M. Cullen, hon. secretary of the league, mentions that the league will be run again next year. He will be glad to receive any suggestions as to how it can be improved, and asks that any club which enters should make every effort to complete its obligations throughout the season.

I.C.I. Rifle League, 1953-4

FINAL LEAGUE TABLES

DIVISION I

	S	W	L	D	Pts.	Agg.
1. Kynoch A .. .. .	6	4	0	2	10	2977
2. Billingham A .. .. .	6	4	1	1	9	2972
3. Ardeer A .. .. .	6	2	3	1	5	2959
4. Nylon A .. .. .	6	0	6	0	0	2918

Awards

Kynoch A: 5 I.C.I. League woven badges

Billingham A: 5 bronze medals

Individual Averages

1. G. Hartley (Billingham A) .. .. .	100.00*
2. A. D. Skinner (Kynoch A) .. .. .	100.00*
3. W. B. Godwin (Kynoch A) .. .. .	99.80
4. N. Chamberlain (Ardeer A) .. .. .	99.50

\* Tie shoot to be arranged. Silver medal to winner.

DIVISION II

	S	W	L	D	Pts.	Agg.
1. Castner-Kellner .. .. .	12	10	2	0	20	5835
2. Kynoch B .. .. .	12	9	3	0	18	5872
3. Chance and Hunt .. .. .	12	8	4	0	16	5814
4. Cassell Works A .. .. .	12	7	5	0	14	5853
5. Ardeer B .. .. .	12	6	6	0	12	5786
6. Bradford Area Office .. .. .	12	1	11	0	2	5473
7. Nylon B .. .. .	12	1	11	0	2	3650

Awards

Castner-Kellner: 5 silver medals

Kynoch B: 5 bronze medals

Individual Averages

1. A. G. Walmesley (Kynoch B) .. .. .	99.17*
2. V. T. Taylor (Chance and Hunt) .. .. .	98.83
3. G. T. Grey (Cassell Works A) .. .. .	98.50
4. C. A. Rock (Chance and Hunt) .. .. .	98.42

\* Silver medal.

DIVISION III

	S	W	L	D	Pts.	Agg.
1. Kynoch C .. .. .	10	10	0	0	20	4798
2. Butterwick .. .. .	10	5	3	2	12	4693
3. Welwyn A .. .. .	10	4	4	2	10	4664
4. I.C.I. Blackley (20 yards) .. .. .	10	4	5	1	9	4700
5. C.E. Dept., Runcorn .. .. .	10	4	5	1	9	4686
6. Nylon C .. .. .	10	0	10	0	0	2500

Awards

Kynoch C: 5 silver medals

Butterwick: 5 bronze medals

Individual Averages

1. Miss I. Truscott (Kynoch C) .. .. .	97.87*
2. A. Greaves Lord (Kynoch C) .. .. .	97.77
3. K. Cooper (Butterwick) .. .. .	97.37
4. T. Crute (C.E. Dept., Runcorn) .. .. .	96.87

\* Silver medal.

DIVISION IV

	S	W	L	D	Pts.	Agg.
1. Cassell Works B .. .. .	10	9	1	0	18	4617
2. Sheffield Branch Office (20 yards) .. .. .	10	8	2	0	16	4587
3. Cassell Works C .. .. .	10	7	3	0	14	4480
4. Dowlais .. .. .	10	4	6	0	8	3979
5. Welwyn B .. .. .	10	1	9	0	2	2102

Awards

Cassell Works B: 5 silver medals

Sheffield Branch Office: 5 bronze medals

Individual Averages

1. R. M. Megginson (Sheffield Branch Office) .. .. .	95.62*
2. N. Wilbraham (Cassell Works B) .. .. .	95.25
3. F. Sanderson (Cassell Works C) .. .. .	93.87

\* Silver medal.

BILLINGHAM DIVISION

An Award well Earned

"For his consistent and untiring application of his technical knowledge and skill in the field of high-pressure machinery operation and maintenance in government chemical factories over the past ten years."

This is part of the citation which went with the award to Mr. Edwin Wilson, 56-year-old maintenance foreman at Prudhoe, of the British Empire Medal. The medal was presented to him on 29th March at Bywell Hall by Viscount Allendale, Lord Lieutenant of Northumberland, and later the same week his colleagues honoured him with a dinner.



Mr. Edwin Wilson receives his B.E.M. from Viscount Allendale

At the presentation ceremony he was accompanied by Mr. J. Rigg (works manager), Mr. J. M. Boycott (works engineer) and Mr. J. Bosomworth (Ammonia Plant fitter).

At the dinner Dr. C. J. Bridger (Billingham External Factories manager) said the award must be an indication that the government are well satisfied with the work of Prudhoe Factory.

"If ever an award was well earned," he said, "it is this one. Mr. Wilson has not only been helped by his thirty years' experience, but he has shown how to work with people and by his example has encouraged them to work with him."

In his reply Mr. Wilson said he would never have achieved the honour had it not been for the teamwork and team spirit which existed at Prudhoe. "This is not my medal," he said, "but the medal of the factory."

PLANT PROTECTION LTD.

Family Service Record

Tommy, Billy and Fred Hooker of Plant Protection's Yalding works are brothers with more than a century of service



The Hooker brothers of Yalding—Fred, Tommy and Billy

between them. Tommy has 40 years' service, Billy 38, and Fred 28. Their sister retired in 1950 after 23 years' service, and their cousin David and his son between them have been with the Company for 16 years.

Tommy Hooker, who is in the Distribution Department, was 13½ when he started work as an office boy. Fred started as a stoker in the derrick extraction plant, and is now the works process foreman. Billy is a stock checker. The brothers have many memories of the factory's early days, when barges used to bring oil and sulphur from Maidstone for the manufacture of insecticides—chiefly hop-washes. In those days the Medway tributary which flows through the works was liable to flood in winter, and the office staff would have to decamp to higher ground. In the second world war Yalding was in "bomb alley," and bombs, doodlebugs and disabled aircraft not infrequently dropped out of the sky. The Hookers remember well the night a 250 kg bomb dropped on the works, fortunately doing little damage.

DYESTUFFS DIVISION

Table Tennis Triumphs

It has been another successful season for Blackley table tennis players.



Victorious Blackley table tennis players

The ladies' team (Adele Pettifer, Jean Braddock and Marjorie Leecy) again accounted for all opposition in the Manchester Women's Division I and retained their championship easily. This team also won the Harry Lee Cup for the third year running. Individually Mrs. Pettifer and Miss Braddock added fourteen more tournament titles to their already large list of achievements. Miss Leecy, in her first season with the section, brought home the Ladies' *Evening Chronicle* Trophy.

The men's first team gained promotion to Manchester Division I by virtue of topping the Division II table. The team of H. Mills (captain), R. H. Gordon, R. Coope, G. Drinkwater, R. H. Hamilton and G. Courtney only lost one match out of the eighteen played. H. Mills set up a club record by not missing a league or cup match for six seasons.

Both A and B teams in the Radcliffe League gained successes. A team, consisting of Don Wainwright, Harold Mills and Ron Coope, won the league championship by a narrow margin. The latter two players represented Radcliffe in inter-town fixtures and won the league doubles cup for the second year running.

The B team of Bob Gordon, George Courtney, and Adele and Len Pettifer won the Division I Challenge Cup. Bob Gordon also represented the league occasionally.

GENERAL CHEMICALS DIVISION

Full Steam Ahead

The opening of a new operating centre at Runcorn for the Division's road transport will revive powerful memories for several men at Castner-Kellner Works. Casting their minds back forty years, they can remember driving the Castner-Kellner Alkali Company's first steam wagons, which had solid tyres and a speed limit of five miles an hour.

Mr. J. Dugdale, now with Security Department, was one of these pioneers; others who manned these early vehicles are Mr. W. Snelson (who now operates an electric crane on the wharf), Mr. H. Hughes (garage foreman), Mr. G. Broady (garage night cleaner), Mr. E. Williams (second man), and Messrs. A. Bignall and J. Dunning, now living in retirement.

The first road vehicle acquired by the Castner-Kellner Alkali Company was a Yorkshire steam wagon with steel tyres. Bought second-hand, it was delivered by rail in 1915. In about 1920 two more steam wagons were bought; these were Sentinels and had solid rubber tyres. None of the vehicles had doors or windscreens, and the nickname given to the Yorkshire wagon, "the Maygo," gives a clue as to its reliability.

In 1925 a fourth steam wagon was bought; this was right up to date, having a windscreen and doors, making the driver's accommodation comparatively luxurious. However, when trailers were used the trailer brakes could not be operated from the driving seat, and it was necessary for a man to ride on the trailer and apply a handbrake as the need arose. This was an austere duty in cold weather, and the trailer man was liable to be covered with frozen spray from the steam wagon.

The steam wagons ploughed along at a steady five miles an hour over roads that would now be considered impossibly rough. At night they were driven by the light of paraffin lamps, and by day and night the drivers had to stop every ten miles or so in order to top up the water tanks. It was quite exceptional to be able to do this from water mains, and a sharp look-out had to be kept for ponds and ditches that would serve as sources of supply.





The Castner-Kellner road fleet in 1917. The three-wheeler in front belonged to Mr. J. R. Allen, now manager of Alkali Division's Lostock Works, and the Vulcan behind it to his father.



Some of the men who drove the Castner-Kellner "steamers" forty years ago, with one of the Division's latest vehicles

Most of the journeys undertaken by the steam wagons with trailers were to Widnes and Liverpool. But journeys were also made to Manchester, which took twenty-four hours, and to Huddersfield. A wagon going to Huddersfield would be away three days, and the crew used to get quite a send-off from the works.

The first vehicle driven by an internal combustion engine was purchased in 1916, and was a car which had been converted into a lorry of 1½ tons capacity. It had a two-stroke engine, and its characteristic exhaust noise gave ample warning of approach. A secondhand Sunbeam car was also bought in 1916, followed in 1917 by a Wolseley. By 1921 the fleet included a Ford bus for carrying senior staff to and from the factory. In common with other vehicles of that time it had a nickname—"Black Maria."

## LIME DIVISION

### Chorister for over Sixty Years

"Harpur Hill is a small village two miles south of Buxton, owing its existence to the lime works of the Buxton Lime Firms and possessing a combined school and church erected by the company in 1876."

So states the 1895 edition of Bulmer's *Derbyshire*. Three years before the issue of this volume a boy 10 years of age was initiated into the church choir, and a year later he began half-time working at the Harpur Hill works of Buxton Lime Firms.

William Mellor was the boy's name, and he continued in the employment of Buxton Lime Firms and its successor, I.C.I., until 1947, when he retired after nearly 54 years' service. His work in the church and its choir has continued now for sixty years and is still not at an end. He played an enthusiastic part in the founding of the present St. James' Church in 1909, and has seen the population for whose spiritual life it provides grow from a mere 500 in 1892 to 3000 at the present time.

This record of conspicuous service was recognised at the service of evensong on Palm Sunday, when an oak vestment chest bearing the following inscription was formally dedicated:

"This chest commemorates the work of John William Mellor, who in the year 1952 completed 60 years' service in the church choir. The front panels of the chest illustrate the lime and limestone industry on which the village of Harpur Hill and its church were founded."



Mr. J. W. Mellor



Commemorating Mr. Mellor's sixty years in Harpur church choir: an oak chest with panels depicting a stone filler and the old Hoffman kiln

At the same time Mr. Mellor was presented with a canteen of cutlery from past and present choir members and the congregation.

The chest was designed and constructed by two employees of the Lime Division, Messrs. J. Widdowson and P. V. Mycock. The carved panels were executed by Messrs. Hunstone of Tideswell, a renowned family of woodcarvers and ecclesiastical architects.

### Grand Old Lady of Harpur Hill

The death at 84 years of age of Mrs. Eliza Askey will be sad news to many in the Division. Mrs. Askey, known as the Grand Old Lady of Harpur Hill, was a former employee of Buxton Lime Firms who came to the Buxton district 55 years ago.

During the first world war she worked as a lime-drawer in the Hoffman kiln. She also had a spell with the Estate Department, and one of her most treasured possessions was a gold medal presented to her by the Company for the best piece of work in a dry stone walling competition. In her younger days she took part in the village's annual sports and was on many occasions the winner of the married ladies' race.

"Granny" Askey was Harpur football team's keenest supporter, and for more than forty-four years she missed few of their matches; her downright comments on the referee and players of the opposing team were always a source of great amusement.

She was one of the oldest members of the local Mothers' Union, W.V.S., and Darby and Joan Club. In January this year she received from the Mayor of Buxton a prize for being the oldest lady present at the old folks' Christmas treat at Harpur Club.

## METALS DIVISION

### Chief Engineer appointed to Board

Mr. G. P. Clay, M.A., M.I.Mech.E., Chief Engineer of Metals Division, was appointed to the board of the Division on 22nd April.



Mr. G. P. Clay

Educated at Bootham School, Manchester University and Trinity College, Cambridge, Mr. Clay completed his engineering trade apprenticeship with Mather and Platt in 1936, when he joined Alkali Division. Military service in the R.E.M.E., initially in A.A. Command and later, with the rank of Major, on fire control instruments for the Chief Inspector of Armaments, occupied the whole of the war period.

He rejoined the Company in 1945 on the staff of the Technical Department at Head Office and was transferred to the Metals Division at Witton in 1949 as Instrument Manager, being appointed Chief Engineer at the beginning of 1953.

### Champion Marksmen

The biggest event of the winter season in the rifle shooting world—the *News of the World* Trophy competition—has been

won this year by the Kynoch rifle team. Competing against 257 teams, the Kynoch marksmen (Messrs. F. J. Brookes, W. Godwin, J. Hall, T. Knight, A. Skinner and A. Traies) achieved a score of 1198/1200, equalling the record score made by last year's winners.



The Kynoch rifle team, winners of the *News of the World* Trophy

The competition, which is run on the knock-out principle, brings the winners a handsome trophy and the title National Short Range Champions.

### Long Service

Two workers with more than 50 years' service each retired in April.

Miss Beatrice Parrish, whose Company service ended on 8th April, spent all her half-century helping to produce shot-gun ammunition. She is one of the last links with the original Kynoch "Sporting Shop," once housed in the building now occupied by The Kynoch Press, and has many tales to tell of pre-mechanisation days, when hand operations meant tedious labour and plenty of blisters.

Also in a reminiscent frame of mind on retirement was Mr.



Mr. Hathaway (extreme left) and Miss Parrish (with glasses) with other 50 year service employees. Mr. C. E. Prosser (Division chairman) is third from left and Mr. S. P. Chambers (a deputy chairman of I.C.I.) in the centre.



John Henry Hathaway, who joined Kynoch Ltd. on his fourteenth birthday 51 years ago. Always a "metal man," Mr. Hathaway was first employed at the Lodge Road Works, transferring to Witton Rolling Mill as a chargehand in 1916. He recalls that in the not-so-good old days factory life was a stern business, with no paid holidays, no pension schemes, no tea breaks and no joint consultation. Describing himself as one of the lucky ones, however, he goes into retirement with no regrets about the pattern of his working life and full of thankfulness that so much has been done in the last fifty years to ease the lot of his colleagues in industry.

## NOBEL DIVISION

### *Gift to Stevenston*

At a public ceremony in Stevenston on 2nd April Dr. James Taylor presented a cheque for £10,000 to Provost J. Morrison. The cheque, a gift from I.C.I. to Stevenston Town



*Dr. James Taylor with Provost Morrison of Stevenston*

Council, commemorates the coronation of the Queen and marks the creation of the new burgh. It also emphasises again the closeness of the relationship between Ardeer Factory and the town of Stevenston. The money will be used to improve the shore and lay out a public park for Stevenston people.

The occasion did not pass without public ceremony. On the approaches to Stevenston shore a small brick alcove had been built, and affixed to the back wall of this alcove was a plaque bearing the burgh coat of arms and the inscription:

"Erected by the Town Council of Stevenston to commemorate the generosity of Imperial Chemical Industries Ltd. in providing funds for the laying out and improvement of this shore ground for the public benefit."

Dr. Taylor was introduced by Provost Morrison. He unveiled the plaque and presented I.C.I.'s cheque to the Provost. The ceremony was watched by a large number of townsmen and townswomen, magistrates and members of the town council, burgh officials, and representatives of I.C.I.

Before unveiling the plaque Dr. Taylor expressed personal interest in the ceremony by saying that he was an old-time resident of the district—actually of Saltcoats, which was almost as good as being a resident of Stevenston.

He was pleased to unveil this plaque, which commemorated the long and harmonious collaboration between the town of Stevenston and Nobel's, and hoped that the town council

project of making a park on the foreshore would add greatly to the amenities of the district, not only for residents but for the large number of visitors who came to that lovely coast in the summer.

The cheque for £10,000 was accepted on behalf of the burgh by Provost Morrison. The Provost said this was a magnificent gift, and went on to praise I.C.I. for the great and intelligent interest they had taken in the town of Stevenston over the years.

The Provost then presented Dr. Taylor with a Bible to commemorate the occasion.

## PAINTS DIVISION

### *Football Section's First Trophies*

For the first time ever, Slough Football Section has won a cup—in fact, two cups! On 17th April, at the Slough Community Centre, after the Slough and Windsor Youth Football League's cup final, Mr. W. Watson (captain) received on behalf of the I.C.I. Slough Minors football team two cups from the ex-Mayor of Slough (Ald. R. C. Abbott).

One of the cups was for winning the championship in Division II of the Slough and Windsor Youth Football League, 1953-4. In addition, each player received a medal.

Winning this cup has given great satisfaction to the team, their supporters and the members of the Football Section Committee, as it will mean promotion to Division I next season. But perhaps even greater honour was symbolised by the second cup, the Sportsman's Trophy, presented by Slough Community Centre and awarded each year for sportsmanship on the field of play.

Another milestone in the sporting affairs of the Division was the opening by Mr. L. H. Williams, Paints Division chairman, of a new bowling green at Slough Recreation Club on 17th April.

Mr. Williams bowled the first wood in a match between Slough and the Bucks County bowls executive, who were the Division's guests at the ceremony. The match was won by the visitors, after a hard struggle, by seven shots.



*Mr. L. H. Williams bowls the first wood on Slough's new green*

## *A Link with the Past*

Mr. Fred Tyrrell, who retired recently after 45 years' service, was one of the last survivors at Slough of the old Naylor Bros. employees who moved there from Southall in 1920. Now only Miss Elsie Andrews and Mr. P. A. E. Naylor remain of "the old gang."



*Mr. Fred Tyrrell*

Mr. Tyrrell joined Naylor Bros. in September 1909. At that time his only previous business experience was represented by four months in a coal merchant's office. In those days, he recalls, coal was sold in bulk at 15s. 9d. per ton, his working hours were 7 a.m. to 6 p.m. (Saturdays 7 a.m. to 5 p.m.) and his wage was 5s. per week.

When Mr. Tyrrell joined Naylor Bros., Mr. H. S. Naylor (father of Mr. H. Morland Naylor, now on the staff of Paints Department, Gloucester House, London) was in charge of the factory, and Mr. W. E. Naylor (father of Mr. P. A. E. Naylor, who is now Paints Division production director) was in charge of the London office in Oxford Street. Some thirty people were employed, all of them men.

## PLASTICS DIVISION

### *Process Worker is Talented Artist*

The picture reproduced below, "Life-Boat Scene," is the work of Mr. Albert Catchpole, a process worker on the P.F. Plant at Wilton.

Mr. Catchpole, who is 24, has studied at the Scarborough School of Art. He won a scholarship which enabled him to spend two years there before the war, and after two years' national service in the R.A.F. Police he returned to the school for a further two years. His art studies ended with a year at the Constantine Technical College, Middlesbrough.

As a student he designed the cover of the Redcar holiday guide, and with other students decorated the Grand Hotel, Scarborough, with paper sculpture depicting the sea in its various moods.



## SALT DIVISION

### *Personnel Manager leaves for Billingham*

Mr. R. W. Pennock, who has been Salt Division's personnel manager since 1952, has been appointed Billingham Division staff manager. He will be renewing old associations, for it is only three years since he left Billingham Labour Department to join Salt Division.

During the past two years the staff and labour force of the Salt Division have been substantially reduced by reorganisation, and also as a result of a swing-over from open pan production to vacuum salt. Mr. Pennock has earned widespread esteem and respect for the skill and sympathy he brought to his work in this difficult period and for his share in the great measure of success achieved in placing redundant employees elsewhere in I.C.I.

Mr. J. C. Morris takes over as Salt Division Personnel Manager. As Winsford Works Manager he has been very closely associated with Mr. Pennock on personnel matters.



*Mr. R. W. Pennock*

## 'TERYLENE' COUNCIL

### *New Home for 'Terylene' Council*



This picture shows the progress that has been made in the work of building a new headquarters for the 'Terylene' Council at Harrogate.

Last year the Council took over an eighteenth-century mansion called Crimple House and the surrounding estate. Since then work has gone ahead rapidly, and as well as the administration building, shown above, several laboratory blocks are well under way.

## I.C.I.A.N.Z.

### *Tribute in Salt*

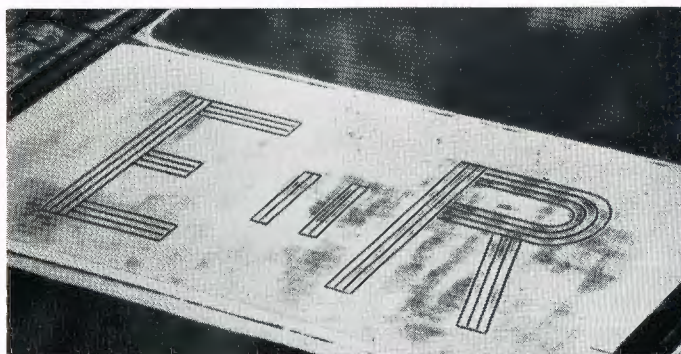
Many elaborate decorative displays were arranged to greet the Queen and the Duke of Edinburgh during the royal tour of Australia—one Sydney store draped the side of its building with a giant Union Jack 50 ft. × 150 ft. in size. But the prize



for the largest single feature can probably be claimed by the I.C.I.A.N.Z. saltfields at Dry Creek, near Adelaide, where some 200,000 tons of salt a year is produced.

Inspired by the suggestion of Mr. C. W. Bonython, manager of the I.C.I. saltfields, one of the large salt-crystallising fields which was just ready for the annual salt harvest was prepared for the Queen to see as her aircraft came and went from the Adelaide aerodrome three miles away on stages of the royal tour.

The crystallising field, 800 ft. × 400 ft. in size—seven acres of salt—was drained of brine and the remaining salt quickly dried in the sun to a dazzling white. Carefully surveyed pegs were placed out on the field and a tractor-drawn salt drain-cutter was driven round the markings to scribe the letters E I I R, 250 ft. high. To pick out the lines in the salt, brine liquor in the furrows was deeply stained with the 'Solivap'



The 250 ft. letters on the Dry Creek saltfields seen from the air

green dye always used at the Osborne saltfields to speed up the solar evaporation of the brine.

Airline pilots said the vivid green letters on the white field were clearly visible from miles away. When Her Majesty's plane took off for Western Australia on 26th March it was observed to make a turn right over the field, and thus it seems certain that the Queen saw this special tribute from her loyal subjects in I.C.I.A.N.Z.

## I.C.I. (CHINA)

### The Chairman Retires

Hong Kong said farewell to one of the most popular and respected members of the British community on 19th April when Mr. A. V. Farmer left to come home on retirement leave after relinquishing his appointment as chairman of I.C.I. (China).

After service in the first world war with the Artists Rifles, the Suffolk Regiment and the Army of the Black Sea, Mr. Farmer joined Brunner, Mond & Co. (China) Ltd. in 1920 and became Harbin district manager of I.C.I. (China) in 1931 and Tientsin Divisional manager in 1932.



Mr. A. V. Farmer

He was appointed a director of I.C.I. (China) in 1939 and on the outbreak of war in the Pacific was in Chungking, whence he was able to make his way via Rangoon to Calcutta. He spent 1942 and 1943 in Calcutta and Chungking, supervising the supply of I.C.I. goods to Free China, and during this period was responsible for instituting the first direct lend-lease transaction between Great Britain and China.

As most of I.C.I. (China)'s directors and expatriate staff had been interned by the Japanese and were in need of recuperation, the difficult task of reconstituting the company as a trading entity on the China mainland at the end of the war with Japan fell largely on Mr. Farmer's shoulders. In July 1948 he was appointed chairman of I.C.I. (China) and during the first eighteen months of occupying this position saw the People's Liberation Army of Mao Tse-tung take over Shanghai, where he was stationed, and then the rest of the China mainland.

In 1951 he was granted an exit permit enabling him to leave Shanghai and after a period of home leave went to Hong Kong, where he was appointed a member of the Public Services Commission and a director of the Hong Kong and Shanghai Banking Corporation. He is very much interested in Freemasonry and is past district Grand Master of the District of Northern China, English Constitution.

During his retirement he will not by any means relinquish his interest in China, for he is an ardent collector of Chinese ceramics and hardstone carvings. He is a member of the Oriental Ceramics Society and has advised the British Museum and other museums about these delightful works of art.

★ ★ ★

## OUR NEXT ISSUE

July 1st is the official birthday of the new company in Canada which takes over the I.C.I. interests there following the division of assets between ourselves and Du Pont's. This split-up was, of course, the result of a court order in the United States.

As from 1st July, therefore, there is for the first time an I.C.I. subsidiary in Canada, and it is called Canadian Industries (1954) Ltd. The story of this change is told in a leading article written specially for the *Magazine* by the Chairman, Dr. Fleck, who for long has taken a keen interest in our Canadian affairs and has made several trips to Canada.

Our next article is by Dr. A. G. White, one of the three Nobel managing directors and the man who shoulders the responsibility for pushing 'Ardil.' He tells the 'Ardil' story to date and gives his reasons why he is convinced that I.C.I., in spite of difficulties, is on to a big thing in developing this protein fibre with its wool-like qualities and its special adaptability to blending.

Finally, we have a noted contributor in Mr. Edgar Chance, one-time managing director of Chance and Hunt Ltd., now part of General Chemicals Division. He describes the methods by which he discovered thirty years ago the secret of how the cuckoo lays her eggs. The original photographs taken with a ciné camera in 1922 are republished.

**CORRECTION.** In the Information Note on penicillin in the last issue the figures for penicillin production should have been 4,881 and 67,394 million mega units instead of 4881 and 67,394.

# This Happy Retirement

By Anne Drinkwater (formerly Alkali Division)

**Y**ES, it is happy. For me it is by far the happiest time of my life; but when I set out to tell you why it is happy I find myself in a quandary. One of my neighbours is a lady of 68, recently retired on pension after a very hard life, and she described herself as being "quietly happy and humbly thankful." Who could wish for more? "Man's wealth lies not in the greatness of his possessions, but in the fewness of his wants."

That is a quotation I read somewhere, and it has always impressed me with its truth.

The idea of launching forth into print occurred to me when I was at an I.C.I. function and was in conversation with a number of people who were approaching retirement age, and I realised that they viewed retirement with dread and horror. They were sorry for me! They asked me, quite seriously, if I did not envy them still having a job to do.

Later, I was asked by a young man, speaking laughingly of his father, "What on earth shall we do to amuse the old man when he retires?" And so I decided to try to show these people and others like them that they are frightening themselves with a bogey—to encourage them by relating my own experience, and to prove that, far from dreading it,

they can look forward to retirement with eagerness and joy.

Do not imagine for one moment that I myself had this attitude before my retirement—far from it! I was an absolute rebel against the retirement rules of the Company

and was the strongest advocate for the retention of people at work for as long as they were capable of doing a job.

When I received the usual letter from the Pensions Department twelve months before my due retirement date, reminding me of its impending approach, I felt pole-axed. I prided myself on being full of pep and young for my age and I was quite sure I could do my job efficiently and well—why should I be dropped like a worn-out glove? I chuckle now when I remember, because I realise that 90% of ageing folk think they look young for their age and fondly imagine that other folk do not realise just how old they are.

That is the first secret of happiness in retirement. We stop pretending. We stop pretending we are as good as we used to be—we know jolly well we are not. Oh, the relief of giving in when we are tired, instead of pretending we do not know the meaning of the word! Because, unconsciously perhaps, we most of us live under a strain during the last



... when I received the usual letter I felt pole-axed



period of our working life—we are so afraid of looking old.

Speaking as a woman fairly conversant with the feelings of my sex, I am sure that half the dread of retirement is based on vanity. We hate to admit our age, and we think it a mean trick for it to be exposed in such ruthless fashion by the announcement of our forthcoming retirement. If we can retire a little earlier "for health reasons" we feel that the situation is saved.

What a fallacy! This is secret No. 2 of happiness in retirement—we do not give a hang who knows how old we are. We do not mind boasting about it.

For the first time in my life (since I was 21, at any rate) I blithely announce my new age on my birthday. Even my granddaughter knows how old I am. She looked at me thoughtfully the other day and said "You'll soon be in your sixties, Grandma—but you don't look it." And I do not feel it; which brings me to secret No. 3—we stop kicking against the pricks and we learn to accept our age as something to be proud of instead of dreading it. After all, our experience is valuable, and we have something the young ones haven't got—knowledge and memories of times vastly different from those of today. How my granddaughter loves to hear of the "olden days when you were young, Grandma"!

You may imagine from the foregoing that I have resigned myself to an armchair and a cap and shawl, as my own grandma did. Not at all. I have never been more active in my life; but I am active by my own desire and in my own time—which brings us to secret No. 4.

For the first time in my life I have time really to live. When you realise that from the earliest age when you begin schooling to the latest age when you retire from work you are never free from a time schedule, perhaps you can understand the wonderful feeling of freedom at its absence.

No longer do I need to go to bed early in order to be fresh for work the next day; I can stay up as long as I like—and stay in bed as long as I like. Joyful thought! If I am tired after lunch, I can put my feet up for an hour or two. Strangely enough I never do, although in my latter years at work I often hurried through lunch so that I could have a little shut-eye before the afternoon session began.

Another grand thing about this retirement is that I now have time for friends. When working, trying to run a home at the same time and, in my younger days, bringing up two young children, I had little time to entertain or to be entertained. Now I have time for the joys of friendship.



... I now have time for friends

This is retirement secret No. 5. I did not live the life of a hermit when working, but life was such a hurried affair that social functions represented just so much more work and could not be enjoyed to the full. Work must come first, and I would not exhaust myself by enjoyment which interfered with my capacity for work with a clear head. Now I really have time for the social graces and can encourage the casual "droppers-in," so that life is interesting and varied.

How do I pass my time? If you are expecting hints on interesting hobbies I am afraid I must disappoint you. I never had time for hobbies when working, and I have not started any since I retired. Quite frankly, I have no time.

As my father remarked to me after he retired: "I cannot imagine how I ever found time to go to work!" My family must take to retirement like ducks to water, since I remember he was very happy in his and never bored, although he had held a position of responsibility in his working life. I cannot remember anything particular that he did.

He loved books—so do I. He loved music and even fancied himself as a singer (our music was home-made in those happy days)—another interest I have in common

with him. He loved tinkering with radio when it was in its infancy and would sit for hours with earphones glued to his head. I am now promoted to television and find some of the programmes extremely interesting. It also enables me to offer entertainment to my friends. He loved motoring and went for long distances in his little car (petrol was cheap in those pre-war days). I have invested some of my savings in a motor scooter and am having a lovely time exploring Cheshire lanes and having occasional trips to the sea. Although petrol is dearer, I can do over 100 miles to the gallon, so my motoring also is not too expensive. I even take a pillion passenger on occasions. One day I took out another pensioner, with silver hair but plenty of agility, and she hopped on to the pillion like a young gazelle and thoroughly enjoyed herself. The policeman's eyes nearly popped out of his head when we sailed through the traffic in Chester. The same lady is trying to persuade me to take up golf, and I may do so later—if I can find time!

I have one interest which my father did not have. I have made a garden from scratch since I retired, and it is beautiful and a source of constant joy.

People will tell you that gardening is hard work. Don't believe them. After the hard digging is done, a flower garden and lawn can be kept in order without much exertion. I do not stoop to weed: I use a long hoe, and for the accessible border I kneel on a cushion in great comfort. I have a lawn-mower which is not too heavy, and it really is not much trouble to use. I can recommend this for a hobby, although I do not call it my hobby—a garden to me is just part of the joy of life, and I cannot think of anything which offers so much beauty for so little effort. You put in an hour planting seeds or bulbs, and you are paid months later by a riot of colour and scent.

I have another interest which my father did not share—a love of house-decorating and furnishing. I have moved since my retirement into a tiny flat, and it is a constant source of interest. Always I can think of new furniture arrangements, and I am very handy with a paint brush. It is great fun.

After his retirement my father travelled round the world and I still treasure the letters he wrote to me on his travels. I too spend a lot of time writing (or rather typing) letters, as my family is scattered abroad, and the typewriter which was my parting gift from the office is well used. I am looking forward to the day when I too shall visit my family abroad. What a lot of interest life still holds!

And now I come to my sixth secret of happiness in retirement. It is freedom from worry. When

working, one feels it necessary to save for the future and for a rainy day, and always there is, consciously or unconsciously, a feeling of uncertainty and sometimes even apprehension.

Well, now the worst has happened. No need to dread the future, because you are already living in it. This is the future. No need to save for a rainy day—this is the wettest you will know, and when you have adjusted yourself to living on a smaller income, life is wonderfully free. You do not need to be afraid of dipping into your savings—this is what you have been saving for, so enjoy it while you can. As the song says, "Enjoy yourself—it's later than you think."

What if ill-health comes later? That also is taken care of in this welfare state, and I do not give it a thought. Perhaps that is my seventh secret—the capacity for living one day at a time, meeting troubles and joys as they come, leaving tomorrow to take care of itself. That is the lesson I learned very young in life, when I was left with two small children and could not see the way ahead.

Each day mastered is another milestone—what is round the corner can be tackled when we meet it. I am still going forward with zest, prepared for anything. Life begins at 55. This retirement is wonderful!



... a lovely time exploring Cheshire lanes





*Net Menders, Folkestone*

*Photo by W. A. Glendinning (Manchester Area Office)*